Innovative. Responsive. Impactful.

BIENNIAL REPORT 2017–2018
HUMAN RESOURCES RESEARCH ORGANIZATION (HUMRRO)

PRESIDENT'S MESSAGE
BIENNIAL REPORT 2017-18

Suzanne Tsacoumis, Ph.D.
President and CEO

As a non-profit consulting firm, HumRRO sits in a unique position that allows us to do what is best for our clients. We are not hamstrung by canned solutions or owners who encourage quick fixes. Instead, we can offer unparalleled technical expertise that is specifically targeted to each individual clients' unique situation and needs. We are driven by a strong desire to make a contribution. We focus on contributing to our clients by attending to their unique circumstances and offering services and solutions that meet their specific goals within their context. We achieve this by fostering a climate that emphasizes collaboration among our employees who value sharing and teamwork as a means to provide our services. This is exemplified by our internal contributions to help our colleagues as well as our collaborative approach to working with our clients.

Our spirit of contributions also extends to sharing our insights and research with the scientific community through publications and presentations. We fund an internal research and development program that provides opportunities for employees to help advance the scientific foundation of our work. We also fund internships and a doctoral fellowship to facilitate the development of the future workforce.

Our mission-orientation means we are able to improve society by helping organizations and the U.S. military ensure they are hiring the right people; by helping people select the best career choice; by ensuring our education testing programs provide students, parents, and school systems with accurate information; and by ensuring only those with the appropriate level of competence receive a certification credential.

HumRRO is very proud of our reputation as an industry leader that offers an unbiased approach to everything we do. We are a results-oriented organization characterized by competence, objectivity, professionalism, integrity, energy, and commitment. Our climate encourages innovation and diligence among our staff who remain engaged in each new challenge. I hope you enjoy reading this biennial report that offers a small glimpse into our contributions to our clients, science, and society.

Best regards,

Suzanne Tsacoumis, Ph.D.
President and Chief Executive Officer

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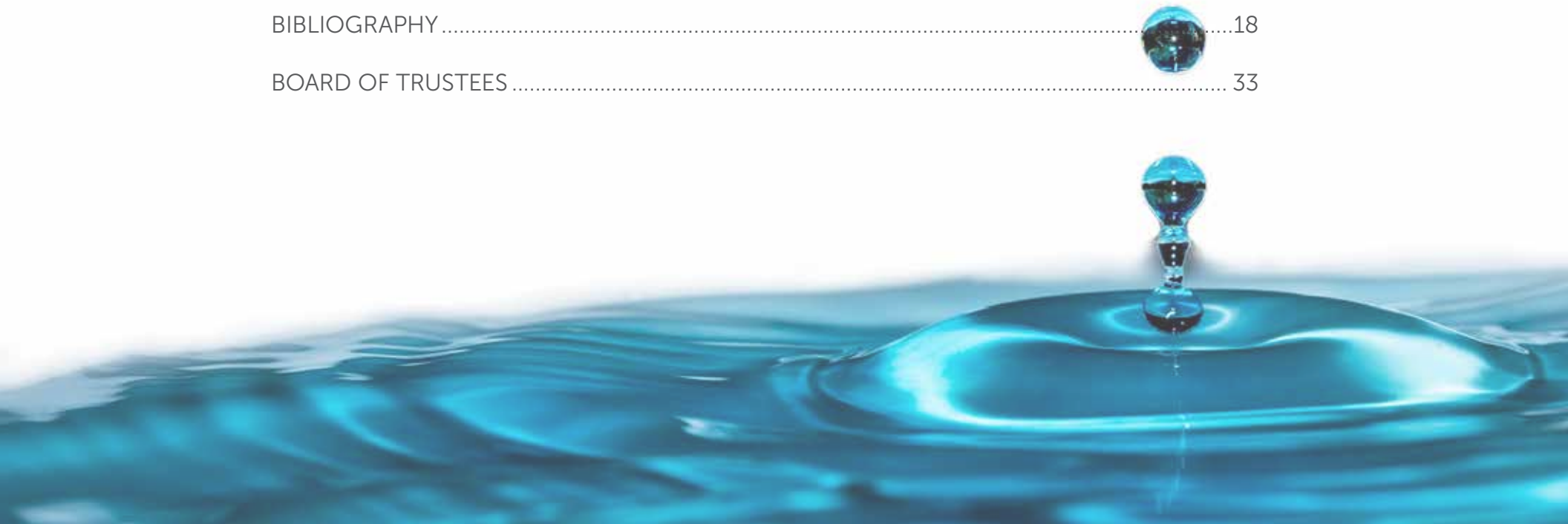
HumRRO's Core Values:

HumRRO is a results-oriented nonprofit organization, characterized by competence, objectivity, professionalism, integrity, energy, and commitment

We foster a climate that encourages innovation and diligence among our staff and rewards those attributes appropriately

We are focused on client solutions

Our employees are excited, engaged in each new challenge, and bring top-notch quality to all our work

At HumRRO, we hold ourselves to high standards, and we know that our clients also expect the best from us

OVERVIEW

HumRRO was created in 1951 by the Department of the Army as an office of The George Washington University in Washington, D.C. During the 24 years that HumRRO operated as a Federal Contract Research Center (FCRC), the company accumulated a distinguished record of both theoretical and practical breakthroughs in the application of psychological and other behavioral science skills to the field of training. HumRRO parted company with The George Washington University in 1969 and incorporated as an independent, nonprofit organization in that same year. Our status as an FCRC was terminated at the end of 1975.

As a nonprofit organization, we are empowered to ensure objectivity, quality and technical rigor in everything we do. Our collegial, informal, and nimble work environment allows us to capitalize on our collective knowledge base and experiences to develop cost-effective solutions that work. We approach each problem by listening, learning, and then designing solutions to address our clients' needs.

Today, HumRRO conducts research and analysis activities for a wide variety of federal agencies, commercial businesses, professional associations, state and local government, and agencies within the national security community. In addition to our headquarters in Alexandria, HumRRO has offices in Monterey and San Diego, California; Louisville, Kentucky; and Minneapolis, Minnesota. With no products to sell, we feel no pressure to force-fit a solution to our clients and with no shareholders, we can invest our earnings in internally funded projects, professional development, improvements to the work environment, and competitive salaries and benefits.

Our Strategic Goals:

Perform High-Quality and Timely Work for External Clients

Engage in Strategic Business Development

Build and Maintain a High-Quality Staff

Manage and Invest HumRRO's Financial Resources

Manage Internal Operations

Contribute to Science and Society

Our Mission:

HumRRO's mission defines the results we strive to achieve:
To develop and apply state-of-the-art science and technology to improve the performance of individuals and teams within public and private sector organizations and educational institutions.

CONTRIBUTIONS TO OUR CLIENTS

We are exceptionally proud of the countless contributions and accomplishments we have achieved in collaboration with our clients. Our 2017-2018 contributions cover a broad range of clients and projects as exemplified by these examples.

Talent Management

HumRRO's recent work related to hiring and promotion involved developing assessments for critical occupations, employing new and traditional approaches to job analysis, and supporting large-scale, high-stakes assessment programs.

Developing Assessments for Critical Occupations

The demand for Cybersecurity and Intelligence Analyst professionals far surpasses the supply. HumRRO has developed assessments to identify individuals with the raw talent and skills necessary to enter these professions. We played a central role in the development and validation of a new measure of information and communication technology literacy, known as the Cyber Test for the U.S. military. We worked with the Army and the Air Force to refine their selection tests for entry into high-demand Cyber occupations, and we collected and analyzed validation data for that purpose. Moreover, we are currently supporting these Services' transition to computer-adaptive delivery. We are working with the Department of Homeland Security to develop assessments to screen and promote qualified Cyber professionals. We also developed an assessment designed to measure specific types of Critical Thinking Skills required by Intelligence Analysts in the U.S. government. In partnership with our government sponsor, HumRRO designed this assessment for use as a developmental tool that enables current Intelligence Analysts to evaluate and to improve their own skills.

For the U.S. Secret Service, HumRRO completed a wide-ranging, high-profile assessment development effort that encompasses two of the agency's largest and most critical occupations. We developed new pre-employment assessments that measure a broad range of competencies, including a diverse set of cognitive and non-cognitive skills and abilities. Another portion of the project focused on building a new promotion system for jobs that involve a substantial level of supervisory and leadership responsibility. We created scenario-based assessments that are administered to candidates online, including a situational judgment test, and virtual role play and in-box simulations. We also developed an innovative evaluation tool designed to help supervisors differentiate performance at high levels of competence, overcoming a common tendency for such evaluations to provide very little differentiating information about candidates. We have developed similar "day-in-the-life" simulations for other government agencies, including the Bureau of Alcohol, Tobacco, Firearms, and Explosives, the Social Security Administration, and the Department of Commerce.

Conducting Job/Task Analyses

HumRRO conducts job/task analyses as input for a variety of purposes, including employee selection tests and promotion systems, career planning programs, and performance standards for professional credentialing programs. As one example, we partnered with the Federation of State Boards of Physical Therapy (FSBPT) to design and execute a process to replace a large-scale practice analysis study conducted every five years with smaller, focused annual surveys. Our work with FSBPT helped reduce the burden imposed by a single large-scale study while ensuring their licensure examinations keep pace with changes

in the field. We continue to actively explore ways to streamline large-scale job analysis efforts through the application of Natural Language Processing (NLP) techniques. Our pioneering NLP efforts have gained the attention of several clients, who have expressed interest in working with us to expand activities in this area. We also conducted a work analysis study to estimate the number of adult disability cases Administrative Law Judges can reasonably adjudicate per month or per year. Finally, we conducted several job analyses focused on identifying the physical or perceptual demands of various positions and the abilities employees must possess to effectively meet those demands.

Assessing Test Validity

HumRRO continues to work with the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) on several long-term projects. One project involves enlisted personnel and two projects focus on the officer corps. In these projects, HumRRO compiles data on both operational and experimental predictors as well as outcome data (e.g., performance ratings, person-environment fit indicators) to support ongoing criterion-related validation work on various cognitive and noncognitive assessments. For example, HumRRO has identified and validated selection tools for officer performance and retention, evaluated experimental measures for identifying Reserve Officer Training Corps (ROTC) and Officer Candidate School (OCS) applicants who are likely to complete their education and remain in the Army beyond their first term of service, and explored improvements to the Army officer branch assignment processes.

For the past two years, we have worked extensively with Southern California Edison (SCE) to update and revalidate numerous employment assessments. For example, we developed work simulation tests for first line supervisors and evaluated commercially available personality assessments for potential use in screening for all leadership positions. We also updated and collected validity evidence for job knowledge tests used in screening candidates for jobs such as Field Hydrographer, Heavy Equipment Operator, and Warehouse Clerk. Finally, we gathered data necessary to transport a physical ability assessment to a wide array of physically-demanding jobs.

Supporting Major Testing Programs

HumRRO continues to support the Defense Personnel Assessment Center (DPAC), which has responsibility for the Armed Services Vocational Aptitude Battery (ASVAB), the primary cognitive screen for those applying to enlist in all branches of the U.S. military. The ASVAB is administered to well over 200,000 individuals annually as part of the DoD enlistment testing program, making it one of the largest employment testing programs in the world. HumRRO supports DPAC by writing and editing items for nine of the ten ASVAB subtests, assisting in item pool development, providing IT support for test delivery, and conducting special studies needed to maintain and enhance the overall testing program. For example, we are conducting studies focusing on various delivery modalities, including different types of electronic devices (tablets, smart phones) and unproctored delivery followed by a short verification test at time of enlistment.

HumRRO also provides significant support to the Defense Language Proficiency Testing (DLPT) program, which is managed by the Defense Language Institute. The Department of Defense uses DLPT results to inform operational readiness, incentive pay, assignment, and training decisions for civilian and military personnel with language skills across organizations and components.

In addition to our work for the military services, HumRRO assists the U.S. State Department (DOS) in administering and scoring the Foreign Service Officer Test (FSOT), the first hurdle to becoming a Foreign Service Officer. HumRRO develops new items and assembles test forms using new and existing test items. The DOS in partnership with our subcontractor, Pearson VUE, administers tests at sites around the world. HumRRO analyzes the data from each administration and reports the results to DOS. HumRRO has also developed new item types for the English Expression portion of the FSOT and successfully replaced a biographical questionnaire with a situational judgment test. We also added screening tests for the DOS Consular Fellows Program and Information Management Specialist.

Education Research and Evaluation

For decades, dozens of states have relied on HumRRO to evaluate various aspects of their educational assessment programs and to conduct studies to examine matters related to those programs. For example, like the rest of the world, the educational domain has become dependent on myriad technologies, which do not always work as planned. In 2018, the Tennessee Department of Education (TDOE) asked us to investigate the impact of disruptions students experienced while completing their computer-based TNReady exams. Designed to assess student knowledge and understanding across a variety of domains, TNReady plays a vital role within the Tennessee Comprehensive Assessment Program (TCAP) by providing information on what students know and can do. Understandably, TDOE was concerned that the disruptions could have negatively affected student test scores. Our researchers used multiple, advanced psychometric and statistical methods to conduct a rigorous comparison of student test scores between disrupted and non-disrupted peers. Through our role as an independent, objective evaluation partner, HumRRO helped Tennessee make informed policy decisions by clearly detailing the potential impact of the computer disruptions. HumRRO stands ready to help our clients address these challenges quickly, thoughtfully, and thoroughly.

HumRRO's impact on education research and evaluation has increased over time, with a primary emphasis on conducting psychometric analyses related to student assessment programs, evaluating classroom practices and instructional interventions, supporting teacher certification, and performing research studies regarding issues critical to ongoing educational initiatives.

Evaluating Alignment of Standards and Assessment Content

Federal and state legislation that mandate evidence of student achievement at all levels helps drive the need for well defined, grade-level standards, and the use of valid, reliable, and fair tests to measure those standards. HumRRO is known for conducting rigorous alignment studies that provide states and assessment programs with the requisite evidence to meet Federal peer review guidelines. We employ a tailored, rigorous approach that relies on input from subject matter experts regarding the

degree to which test items (a) assess the applicable standards, (b) assess the standards at the depth of knowledge intended, and (c) cover the full spectrum of content knowledge demanded by the standards.

HumRRO has effectively conducted numerous alignment studies for states (e.g., Iowa, North Dakota, Colorado, Delaware, Maine, Missouri, New York, South Carolina, Tennessee), consortia (e.g., the Partnership for Assessment of Readiness for College and Careers [PARCC], Smarter Balanced Assessment Consortium), and assessment programs (e.g., Educational Testing Service's Winsight English language arts and mathematics assessments). Several of these studies required novel approaches to handle challenges such as determining alignment of complex performance-based item types to multifaceted Next Generation Science Standards.

Verifying Psychometric Analyses

Another focus of HumRRO's educational research involves providing psychometric quality assurance services for large-scale testing programs. Given the vast amount of data involved and the complexity of the analyses conducted, states and other testing entities often require parallel data analyses to verify the results—which can have major implications for states, schools, and students— prior to reporting them. Some states that HumRRO supports in this capacity include Delaware, Florida, Indiana, Kentucky, Minnesota, North Dakota, South Carolina, and Virginia.

Evaluating Educational Assessments and Initiatives

Over the past decade, much of HumRRO's evaluation activity has centered around educational programs and interventions. We have provided psychometric support and conducted evaluation-oriented research studies for two major consortia, PARCC and Smarter Balanced. During the 2017–2018 school year, we conducted comprehensive evaluations of New Hampshire's Performance Assessment for Competency Education (PACE) and South Carolina's College and Career Ready Assessments (SC READY). In a ground-breaking effort, HumRRO worked with the National Center for the Improvement of Educational Assessment to develop an innovative evaluation methodology based on the Criteria for Procuring and Evaluating High Quality Assessments. Using this new methodology, HumRRO evaluated strengths and weaknesses related to content, depth, and accessibility of the high school English language arts and

mathematics summative assessments for four programs—ACT Aspire, the Massachusetts Comprehensive Assessment System (MCAS), PARCC, and Smarter Balanced.

We continued our long-standing relationship with the California Department of Education where we conducted several research studies and evaluation activities related to California's comprehensive student assessment system, known as the California Assessment of Student Performance and Progress (CAASPP). HumRRO also designed and carried out several policy studies for the National Assessment Governing Board related to the National Assessment of Educational Progress (NAEP), also known as the Nation's Report Card.

Supporting Teacher Certification

Over the past few years, HumRRO has supported teacher certification programs in several different states. We analyzed teacher job requirements to help ensure that certification exam blueprints were clearly linked to duties performed in different teaching positions. One example is our work for the California Commission on Teacher Credentialing, where we collected input from a wide array of teachers on the Commission's Teacher Performance Expectations (TPEs). The TPEs serve as the foundation for the Commission's Teaching Performance Assessment (TPA) model.

Human Capital Management & Analytics

HumRRO's recent work in this area includes evaluations of recruiting and selection practices, research to support career decision making, and support for workforce planning.

Reviewing Recruitment and Selection Practices

City and county law enforcement agencies face challenges in recruiting and hiring the right talent in sufficient numbers to meet hiring and retention goals. HumRRO partnered with the International Association of Chiefs of Police (IACP) to develop a virtual ride along designed to attract non-traditional candidates to the field of law enforcement. The virtual ride along depicts realistic scenarios that emphasize community-oriented policing activities, to counter sensationalized portrayals of law enforcement duties widely available on television shows and movies. We also partnered with IACP to review and recommend potential changes to recruiting and hiring practices for the Little Rock Police Department and the Los Angeles County Sheriff's Department.

Conducting Research to Support Career Decision Making

HumRRO conducts a number of lines of work related to supporting smart career choices, across a range of organizations, occupations, and career seekers. For example, we recently supported the Association of American Medical Colleges (AAMC) on their residency matching process for medical schools and medical students. For this effort, HumRRO mined extensive data available from AAMC to identify the most important factors for achieving successful matches. We then developed sophisticated matching algorithms as a foundation for tools that AAMC offers to medical colleges and medical students. HumRRO software engineers also programmed and designed the web-based matching tool.

In a second stream of research, HumRRO developed a career pathing program for the Air Traffic Operations Division of the Federal Aviation Administration (FAA). We developed a streamlined method for gathering career pathing information from dozens of FAA subject matter experts, developed matching algorithms, and re-engineered an existing career pathing website and underlying matching tool.

Finally, HumRRO provided analytic support for the military and several private sector organizations that offer career exploration tools for different target audiences. Some systems focus primarily on high school students who face decisions about college and career choices, while other systems focus on working adults who may be seeking a career change. Typically, HumRRO provides critical analytic expertise to design and program matching algorithms and advice on applications of the resulting tool. Increasingly, we provide expertise in developing user-friendly online tools.

Gathering Workforce Information

Currently, HumRRO is conducting the first-ever study of the emergency nursing workforce on behalf of the MedEvac Foundation and several partners. The effort includes compiling information from existing data sources, such as the National Council of State Boards of Nursing, and membership rosters for several pertinent professional associations. We will develop and administer a survey to collect information about the current state and pipeline of emergency nurses. The results of the survey will provide a comprehensive view of the emergency nursing workforce, including current demographics and where the field is headed.

Credentialing Services

HumRRO has a long history of assisting professional organizations as they seek to develop, implement, and maintain programs that allow individuals the opportunity to demonstrate their expertise in a given field by taking examinations that test the breadth and depth of their knowledge and abilities.

Building and Maintaining Credentialing Programs

HumRRO began working with the American College of Veterinary Surgeons 30 years ago. Since that time, we have built strong partnerships with numerous diverse professional certification and licensure programs. In some cases, we worked with our clients to build a new program, and in other cases we support pre-existing assessment programs. Our typical services include building and maintaining the exam item bank, standard setting, form building, exam scoring, and reporting results. We have also helped several clients transition from paper-based to computer-based or online testing, and more recently, to alternative assessment methods (e.g.,

situational judgment tests). Long-term clients include the Association of Legal Administrators, the National Automated Clearing House Association, the American College of Healthcare Executives, and the Federation of State Boards of Physical Therapy. More recent clients include the Society for Human Resource Management (SHRM), Pharmacy Technician Certification Board, Radiology Coding Certification Board, School Nutrition Association, and the Investments and Wealth Institute.

For SHRM, we provided critical support as they launched a new certification program for Human Resources professionals. We facilitated an international body of subject matter experts to develop scenario-based test questions, building a large item bank to support development of alternate forms. We also evaluated the likely impact of proposed changes to the program in its early years and conducted sophisticated psychometric analyses as some of these changes were implemented. We continue to support SHRM with situational judgment item development, form assembly, and the psychometric requirements of its program.

The National Council of Architectural Registration Boards (NCARB) develops and administers the Architectural Registration Examination (ARE) as a requirement for licensure/registration as an architect in the U.S. HumRRO conducted research on the pace of change in the architecture profession, the results of which informed NCARB's policies and planning in two major ways. First, our research informed NCARB's "Rolling Clock" policy (i.e., the timeframe in which a candidate for licensure must pass all sections of the ARE). Second, our work provided an empirical basis for NCARB's planning for their future practice analysis activities.

Assessing the Impact of Credentials

HumRRO conducted research for the Board of Certification for Emergency Nursing (BCEN) that sought to determine if there are tangible benefits accruing to those who seek BCEN's Certified Emergency Nurse (CEN®) certification. We identified outcomes that might be affected by possessing this credential, including employability, compensation, professional growth, and job performance. We then developed surveys that were administered to practicing emergency nurses, including certificants and non-certificants, as well as the immediate supervisors of respondents. HumRRO then carried out a series of sophisticated statistical analyses, controlling for a wide range

of variables that might also be related to the target outcomes. The results indicated that CEN® certification is positively related to multiple important outcomes. More recently, HumRRO began working with the Institute for Credentialing Excellence to field a survey regarding opinions and beliefs about the value of various types of certifications.

Personnel Research and Policy Analysis

HumRRO has supported the Department of Defense Career Exploration Program (CEP) for several years. The CEP allows high school students an opportunity to take the Armed Services Vocational Aptitude Battery (ASVAB) and a vocational interest assessment free of charge. Students, parents, and educators then receive information about occupations that may be a good match for the students' aptitudes and interests. Responsibility for maintaining the CEP falls with the Defense Personnel Assessment Center (DPAC), while marketing and implementation of the program is carried out by the U.S. Military Entrance Processing Command (USMEPCOM). Over the past two years, HumRRO worked with DPAC and MEPCOM to evaluate the extent to which secondary school teachers are aware of and support the CEP. After conducting a series of focus groups around the country, HumRRO provided several recommendations for improving the CEP itself and for increasing outreach to secondary school teachers so they possess the knowledge necessary to help students take advantage of insights gained through CEP participation. HumRRO has also helped modernize the CEP website.

HumRRO conducted sophisticated modeling to analyze the impact of various enlistment incentives on the Army's ability to place recruits in Military Occupational Specialties (MOS) where the need is greatest. MOS incentive types, levels, amounts, and qualification criteria are determined by the Enlistment Incentive Review Board (EIRB). First, HumRRO modeled actual job choices based on archival data. Then, we developed and piloted a decision support tool that the EIRB could use to forecast the likely impact of policy changes in the allocation of enlistment incentives across MOS. Over time, we refined and expanded the decision support tool to account for a wider array of MOS and factors that impact classification of enlisted personnel into MOS.

On behalf of DPAC, HumRRO has recruited and convened two panels of internationally recognized experts in (a) career exploration and (b) personality assessment. The career exploration panel is charged with reviewing relevant research and recommending improvements or updates to the DoD CEP and the vocational interest measure that is part of that program. The panel of personality assessment experts is charged with reviewing research on the Tailored Adaptive Personality Assessment System (TAPAS) and making recommendations regarding its readiness for operational use in military recruit screening.

Leadership Development

HumRRO is working with the U.S. Secret Service to create a framework that will support an organization-wide Leadership Development Program, with the ultimate goal of populating the framework with information about development opportunities, resources, and exercises. The foundational work includes specifying leadership levels and associated definitions, performance requirements and competencies, and proficiency levels associated with each competency.

HumRRO has also developed online simulations designed to provide candidates with developmental feedback on leadership competencies relevant for their organization and level. One simulation is used to evaluate readiness for an executive leadership development program in the federal government. Another is tailored to the Federal Aviation Administration and is offered as a voluntary self-development tool to current employees. Finally, we are working with the International Coaching Federation to update its competency model for coaches who, in turn, provide developmental guidance to aspiring and current leaders in many organizations and industries.

CLIENTS (2017-2018)

Federal Government

Federal Government

Army Research Institute for the Behavioral and Social Sciences

Army Research Institute of Environmental Medicine

Bureau of Alcohol, Tobacco, Firearms and Explosives

Defense Personnel Assessment Center

Department of Commerce

Department of Defense

Department of Homeland Security

Department of Education

Department of Justice

Department of State

Drug Enforcement Administration

Federal Aviation Administration

National Assessment Governing Board

National Center for Education Statistics

Office of the Director of National Intelligence

Office of Personnel Management

U. S. Air Force

U. S. Navy

U. S. Marshals Service

U. S. Secret Service

State and Local Governments

California Commission on Teacher Credentialing

California Department of Education

City of Lubbock Police Department

Colorado Department of Education

County of Westchester

Fairfax County Government

Florida Department of Education

Indiana Department of Education

Kentucky Department of Education

Maine Department of Education

Minnesota State Colleges and Universities

Minnesota Department of Education

North Dakota Department of Public Instruction

Port Authority of NY & NJ

State of South Carolina

Tennessee Department of Education

University of Iowa

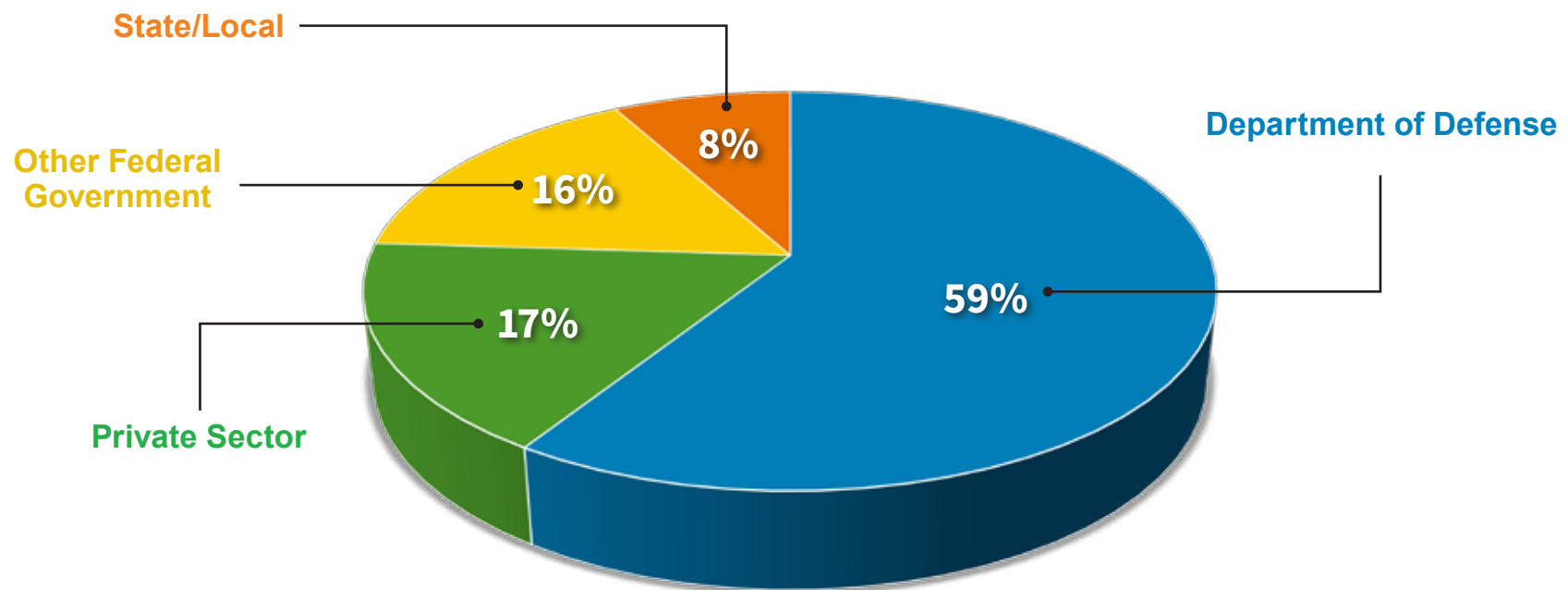University of Kansas

University of Wisconsin

Private Sector

ACT, Inc.
American Academy of Periodontology
American Board of Audiology
American Board of Criminalistics, Inc.
American Board of Pain Medicine
American College of Health Care Administrators
American College of Healthcare Executives
American College of Veterinary Surgeons
American Society of Military Comptrollers
American Veterinary Dental College
Association for Talent Development
Association of Administrative Law Judges
Association of American Medical Colleges
Association of Legal Administrators
Association of Professional Social Compliance Auditors
CenterPoint Education Solutions
Community Association Managers International Certification Board
Council of Chief State School Officers
Curriculum Associates
Edison Electric Institute
Educational Records Bureau
Educational Testing Service
Exelon Nuclear Security
Federation of State Boards of Physical Therapy
FedEx
General Counsel PC
Girl Scouts of Western Washington
Houghton Mifflin Harcourt
International Coach Federation
Investments & Wealth Institute
IlluminateEd

Macmillan Learning
Marriott International
Measured Progress
MedEvac Foundation International
Metropolitan Washington Airports Authority
National Affordable Housing Management Association
National Association of Housing and Redevelopment Officials
National Automated Clearing House Association
National Center for Interprofessional Practice and Education
National Center for O*NET Development
National Conference of Bar Examiners
New Meridian
Northwest Evaluation Association
OptumInsight
Pearson
Pharmacy Technician Certification Board
Procter & Gamble Company
ProLiteracy
Quality Metric Incorporated
Questar Assessment, Inc.
Radiology Coding Certification Board
Riverside Assessment Holdings LLC
School Nutrition Association
Society for Human Resource Management
Southern California Edison Company
The Clearing House Payment Co. LLC
The College Board
The MITRE Corporation
UnboundEd
U.S. Math Recovery Council
W.L. Gore & Associates, Inc.
Walmart Stores
YouScience

FINANCIAL STATEMENT

Fiscal Years 2017 and 2018 were financially sound for HumRRO. Our bottom line totaled over $3 million for the two years and thus pushed our unrestricted net assets (net worth) to $16 million—the highest in company history. Our revenues increased by more than $5 million from Fiscal Year 2017 to 2018, reflecting the value that HumRRO delivers to its clients. We strive to maintain and improve upon our success going forward.

FY2018 HumRRO Revenue by Source

- **State/Local** — 8%
- **Other Federal Government** — 16%
- **Private Sector** — 17%
- **Department of Defense** — 59%

Total: $34,575,770

The financial results presented here have been audited by our independent accounting firm BDO USA, LLP. A full copy of the audit report is available upon request.

CORPORATE OFFICERS

Suzanne Tsacoumis

President and Chief Executive Officer

Appointed on July 1, 2018, Dr. Suzanne Tsacoumis is HumRRO's 7th President. Prior to that, she served as one of HumRRO's Vice Presidents for just over a decade. On the technical side, Dr. Tsacoumis built her professional career conducting and managing projects associated with the research, development, and implementation of personnel assessment and human capital systems, often in litigious environments. She has spearheaded innovative work in the development of rich-media simulations for use in both promotion and self-assessment processes. She often consults on a range of policy and implementation issues. Dr. Tsacoumis has been an active volunteer for the Society of Industrial-Organizational Psychology (SIOP) and she is a fellow of SIOP and the American Psychological Association (APA).

Deirdre Knapp

Vice President and Director, Assessment and Evaluation in Education and the Workplace Division

Dr. Deirdre J. Knapp is HumRRO's Vice President of HumRRO's Assessment and Evaluation in Education and the Workplace Division. Dr. Knapp's primary area of technical expertise is the design and development of performance assessments. Her work spans many different contexts (e.g., certification and licensure testing, criterion measurement for validation research, performance assessment for promotion systems), many different types of organizations (e.g., the military, Federal government agencies, professional associations), and a variety of assessment methods (e.g., multiple-choice tests, live work sample simulations, computerized adaptive testing). She also has authored or coauthored several book chapters on performance measurement and professional ethics, and she co-edited Exploring the Limits in Personnel Selection and Classification with Dr. John Campbell. Dr. Knapp is a fellow of the American Psychological Association (APA), Society for Industrial and Organizational Psychology (SIOP), and the Society for Military Psychology. She has held a variety of elected offices and other leadership roles in these and other professional organizations.

Cheryl Paulin

Vice President and Director, Talent Management and Analytics Division

Dr. Cheryl Paullin is HumRRO's Vice President of Talent Management and Analytics. She is a corporate officer. Throughout her career, Cheryl's technical work has focused on development, validation, and implementation of many different custom assessments for a variety of talent management purposes, from pre-employment screening to promotion to employee and leader development, often in high-stakes situations. She has worked with a wide variety of public- and private-sector clients, including several Fortune 500 clients and clients at all levels of government. She has published a book chapter and best practice guidelines for HR practitioners on the aging workforce and has presented on development and validation of high-stakes assessments at numerous conferences. Cheryl has served in volunteer leadership roles to support the profession of I-O Psychology at the local and national levels. She is a fellow of the American Psychological Association and of the Society for Industrial and Organizational Psychology.

Kirk Abriola

Chief Financial Officer and Vice President

Mr. Abriola is HumRRO's Chief Financial Officer and Director of the Business Affairs Division. He has more than 30 years' experience in government contracting, finance and non-profit organization. He has previously served in a wide variety of roles. Several highlighted roles include serving as a CFO for a multi-entity Alaskan Native Corporations where he was responsible for the finance and contracts shared services. Kirk was as Senior Government Contracting Consultant with Cherry Bekart LLP, where he focused his practice on delivering advisory services to clients in support of the complexities that come with federal contracting. Prior to that he served in a senior financial management role with Population Services International, a nonprofit social marketing organization operating in more than 50 countries. Kirk also previously worked with Deltek as a Software Designer specializing in the government contracting industry. He received a Bachelor of Science in Finance from the Pennsylvania State University and is a CPA in the District of Columbia.

David Dorsey

Vice President and Director, Business Development Division

Dr. David Dorsey currently serves as a Vice President and the Director of the Business Development Division at HumRRO. He was previously a senior executive in the U.S. government (Defense Intelligence Senior Level, DISL), serving in the area of defense and intelligence. Prior to working in government, Dr. Dorsey was a Vice President at Personnel Decisions Research Institutes (PDRI). Dr. Dorsey has conducted innovative research and development in the areas of understanding adaptive performance, innovating performance management, using modeling and simulation technologies for learning, understanding career paths, and building corporate level data science platforms and communities. Dr. Dorsey has produced over 70 book chapters, articles, and presentations. He is the recipient of two major research awards and an award for being a top leader in government. In 2017, Dr. Dorsey was elected a Fellow by the Society for Industrial and Organizational Psychology (Division 14 of the American Psychological Association). He also serves as an executive coach, having completed the Georgetown leadership coaching program.

BIBLIOGRAPHY (2017-2018)

2017 Presentations

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Bejar, I., Deane, P., Flor, M., & Chen, J. (2017, April). *Difficulty of the sentence equivalence item type: Implications for a validity argument*. Paper presented at the annual meeting of the National Council on Measurement in Education, San Antonio, TX.

Besl, A. N., Ginther, N. M., Skinner, J. F., Purl, J. D., Robinson, S. D., & McGlochlin, T. D. (2017, April). *Our relationship with turnover: It's complicated*. Symposium presented at the 32nd annual conference of the Society for Industrial-Organizational Psychology, Orlando, FL.

Bilyeu, A., Thacker, A., Branson, D., Cook, G., & Whisler, K. (2017, June). *Operationalizing NGSS assessments: Performance level descriptors, alignment studies, and standard setting.* Symposium presented at the Council of Chief State School Officers (CCSSO) National Conference on Student Assessment, Austin, TX.

Chaffee, C., Waugh, G. W., Julian, E., Weiner, J., & Alonso, A. (2017, October). *Essay strategies for assessing professional judgment and other high-level, real-world skills.* Panel discussion at the annual conference of the Institute for Credentialing Excellence, New Orleans, LA.

Chen, J., Liu, L., Mulholland, M., & Jenkins, T. (2017, April). *Automated classification of students' short responses into learning progression levels*. Paper presented at the annual meeting of the National Council on Measurement in Education, San Antonio, TX.

Chen, J., Zhang, M., & Bejar, I. (2017, April). *Feature aggregations in automated essay scoring*. Paper presented at the annual meeting of the National Council on Measurement in Education, San Antonio, TX.

Doherty, J., Blacker, S. D., Walker, E, F., Coakley, S. L., Lee, B. J., Vine, C., Rue, C. A., Flood, T. R., Rayson, M. P., Knapik, J. J., Gebhardt, D. L., Nindl, B., Brown, P., Jackson, S., Greeves, J. P., Myers, S. D. (2017, December). *A job task analysis of a parachuting training exercise conducted by the British army parachute regiment.* Presented at the 4th International Congress on Soldiers' Physical Performance (ICSPP), Melbourne, Australia.

Everson, H., & McCloy, R. (2017, July). *Designing and conducting simulation studies in psychometrics*. Workshop conducted at the Defense Language Institute English Language Center, Lackland AFB, San Antonio, TX.

Flood, T. R., Myers, S. D., Walker, E, F., Coakley, S. L., Rue, T. R., Lee, B. J., Vine, C., Doherty, J., Rayson, M. P., Knapik, J. J., Gebhardt, D. L., Nindl, B., Brown, P., Jackson, S., Greeves, J. P., Blacker, S. D. (2017, December). *A job task analysis of casualty drag tasks performed by the ground close combat roles in the UK Armed Forces*. Presented at the 4th International Congress on Soldiers' Physical Performance (ICSPP), Melbourne, Australia.

Gebhardt, D. L. (2017, December) *Occupational and operational physical tests and standards for the military – International status and lessons learned*. Presented at the 4th International Congress on Soldiers' Physical Performance (ICSPP), Melbourne, Australia.

Gebhardt, D. L. (2017, July). *Keynote presentation: Physical jobs in a digital age.* Presented at the annual conference of the International Personnel Assessment Council, Birmingham, AL.

Gebhardt, D. L., & Baker, T. A. (2017, May). *Selection into shipbuilding occupations when dealing with missing data.* Presented at the annual conference of the American College of Sports Medicine, Denver, CO.

Gribben, M. (2017, June). Can process data lead to a deeper understanding of student performance? In W. Buckland (Chair), *Student process data in educational assessment*. Symposium conducted at the annual meeting of the National Conference on Student Assessment, Austin, TX.

Hardoin, M. M., &, Zilbert, E. (2017, November), *An independent evaluation of the utility of reporting for California Assessment of Student Performance and Progress (CAASPP) summative and interim assessments.* Presentation for the California Educational Research Association (CERA) annual conference, Anaheim, CA.

Hargrove, A. K., Kaplan, S. A., Winslow, C. J., Green, J. P., & Kong, W. (2017, August). Differentiating the role of frustration and anger in the within-person stressor-CWB relationship. In M. F., Gonzalez, E., Larson, & Y. Cohen-Charash (Chairs), *Emotions at the social interface: How emotions link people and their social environments.* Symposium conducted at the annual meeting of the Academy of Management, Atlanta, GA.

Harless, L., Ganoe, J. H., & Bradley, K. M. (2017, October). *Best practices in subject matter expert (SME) talent management.* Panel discussion conducted at the Institute for Credentialing Excellence (ICE) Exchange conference, New Orleans, LA.

Huber, C. R., Capman, J., Boyce, A. S., & Lobene, E. V. (2017, April). *Cross-cultural generalization of a multidimensional pairwise preference personality inventory.* Paper presented at the 32nd annual conference of the Society for Industrial and Organizational Psychology, Orlando, FL.

Huber, C. R., Conway, J. S., & Boyce, A. S. (2017, April). *Score differences between employed and unemployed participants on frame-of-reference scales.* Paper presented at the 32nd annual conference of the Society for Industrial and Organizational Psychology, Orlando, FL.

Leather, P., Wilhoit, G., & Thacker, A. (2017, June). *Formative evaluation of New Hampshire's Performance Assessment of Competency Education (PACE).* Symposium presented at the Council of Chief State School Officers (CCSSO) National Conference on Student Assessment, Austin, TX.

McCloy, R. A. (Panelist). (2017, April). In I. Cozma & M. Liu (Chairs), *I-O from the other side: Internal-external consulting dynamics.* Panel Discussion conducted at the 32nd annual conference of the Society for Industrial and Organizational Psychology, Orlando, FL.

McCloy, R. A., & Oswald, F. L. (2017, April). *Honing your statistical superpowers: From traditional methods to big data.* Pre-Conference Workshop conducted at the 32nd annual conference of the Society for Industrial and Organizational Psychology, Orlando, FL.

McCloy, R. A., Putka, D. J., Purl, J., Robbins, S., & Le, H. (2017, April). Identifying universally critical characteristics of O*NET occupations: A prelude to assessing workforce readiness. In F. De Fruyt & O. P. John (Chairs), *Connecting education and the labor market: 21st century skills and workforce readiness.* Symposium conducted at the 32nd annual conference of the Society for Industrial and Organizational Psychology, Orlando, FL.

Michaels, H. R. (2017, June). *Alternate assessment alignments: What best practices and lessons have taught us.* Paper presented at the annual meeting for the National Conference on Student Assessment, Austin, TX.

Michaels, H. R., & Schultz, S. R. (2017, April). *Alignment for complex testing systems.* Paper presented at the annual meeting of the National Council on Measurement in Education, San Antonio, TX.

Michaels, H. R., & Schultz, S. R. (2017, April). *Applications of HQAP to evaluate the equality of assessment content and characteristics.* Paper presented at the annual meeting of the American Educational Research Association, San Antonio, TX.

Michaels, H. R., & Schultz, S. R. (2017, April). *An innovative alignment approach to computer adaptive tests.* Presentation at the annual meeting of the National Council of Measurement in Education, San Antonio, TX.

Michaels, H. R., & Schultz, S. R. (2017, April). *Implementing lessons learned from the first administration of the high-quality assessment evaluation methodology.* Presentation at the annual meeting of the American Education Research Association, San Antonio, TX.

O'Shea, G., & Schehl, J. (2017, April). *Certified Legal Manager exam (CLM): Under the hood.* Presented at the annual conference of the Association of Legal Administrators, Denver, CO.

O'Shea, P. G. (2017, December). *Revisiting "Are the best leaders both transformational and transactional?" through "The years of Lyndon Johnson: Master of the Senate."* Paper presented at the 16th annual International Studying Leadership Conference; University of Richmond; Richmond, VA.

Patelis, T. (2017, April). Efforts to evaluate the quality of assessment programs. In T. Patelis (Chair), *Perspectives on quality in assessment practice.* Coordinated session conducted at the annual meeting of the National Council on Measurement in Education, San Antonio, TX.

Patelis, T. (2017, August). Measurement in college admissions and higher education institutional research. In L. D. Stanford (Chair), *Assessment and measurement competencies in various disciplines and the training involved and needed.* Symposium conducted at the annual meeting of the American Psychological Association, Washington, DC.

Patelis, T. (2017, June). *Evidence and information needed and provided for using national recognized high school assessment for ESSA.* Symposium (Moderator) at the annual National Conference on Student Assessment, Austin, TX.

Patelis, T. (2017, June). Some comments on validating interim assessment. In T. Patelis (Chair), *Validating interim assessments for various purposes and uses including for ESSA.* Symposium discussant at the annual National Conference on Student Assessment, Austin, TX.

Patelis, T. (2017, October). Perspectives on graduate student internships. In C. Setzer (Facilitator), *Perspectives on graduate student internships.* Symposium at the annual meeting of the Northeastern Educational Research Association, Trumbull, CT.

Patelis, T. (2017, October). Significant trends in educational research: Insights from NERA past presidents. In J. Young (Chair), *Past president's panel*. Plenary session conducted at the annual meeting of the Northeastern Educational Research Association, Trumbull, CT.

Patelis, T., & Gong, B. (2017, April). Evaluating interim assessments: Non-standardization, quality, and usefulness. In T. Patelis (Chair), *Contemporary issues with interim assessments*. Coordinated session conducted at the annual meeting of the National Council on Measurement in Education, San Antonio, TX.

Patelis, T., & Gong, B. (2017, April). Next generation alignment methodologies: A method to evaluate test content quality and some lessons learned. In S. Norton (Chair), *Next generation alignment methodologies for next generation tests*. Symposium conducted at the annual meeting of the American Educational Research Association, San Antonio, TX.

Putka, D. J. (2017, April). *As the pendulum swings: Debating what's really new in I-O.* Theme track session at the 32nd annual conference of the Society for Industrial and Organizational Psychology, Orlando, FL.

Putka, D. J. (2017, April). Introduction to advanced predictive modeling. In S. McAbee (Chair), *Teaching Big Data methods in I-O graduate curriculum: A primer*. Symposium at the 32nd annual conference of the Society for Industrial and Organizational Psychology, Orlando, FL.

Putka, D. J. (2017, October). *An introduction to modern perspectives on prediction for data big and small.* Invited presentation at the Mayflower Group 2017 Fall Meeting. Savannah, GA.

Putka, D. J., Oswald, F., & Jundt, D. K. (2017, April). *Inductive research in I-O psychology.* Community of Interest at the 32nd annual conference of the Society for Industrial and Organizational Psychology, Orlando, FL.

Schultz, S. R., & Carinci, J. (2017, March). *Bringing improvement science into educator preparation programs through accreditation*. Presentation at the Carnegie Summit on Improvement in Education, San Francisco, CA.

Sinclair, A. L. (2017, April). *An investigation of the alignment of competency models in education*. Symposium presentation at the 32nd annual conference of the Society for Industrial and Organizational Psychology, Orlando, FL.

Snyder, L. A., & Taylor, W. D. (2017, April). *What free time? Studying daily work recovery among student-employee*. Paper presented at the annual conference of the Society for Industrial and Organizational Psychology, Orlando, FL.

Thacker, A. A. (2017, October*). Assessment of next generation science standards: Challenges and early lessons.* Presentation at the annual research conference for the Consortium for Research on Educational Assessment and Teaching Effectiveness (CREATE), Virginia Beach, VA.

Thacker, A. A. (2017, October). *Formative evaluation of New Hampshire's Performance Assessment of Competency Education (PACE).* Presentation at the annual research conference for the Consortium for Research on Educational Assessment and Teaching Effectiveness (CREATE), Virginia Beach, VA.

Tsacoumis, S. (2017, December). *Rich-media assessments: Do they work?* Presentation at the conference on Assessment Centres and Human Resource Management in Emerging Markets: Lessons from Global Practice. Virtual presentation.

Vine, C., Myers, S., Walker, E., Coakley, S., Rue, C., Lee, B., Flood, R., Dohery, J., Rayson, M., Knapik. J., Gebhardt, D*., Nindl, B., Brown, E., Jackson, S., Greeves, J., Blacker, B. (2017, December). *A job task analysis to quantify the physical demands of load carriage duties conducted by ground close combat roles in the UK armed forces*. Presented at the 4th International Congress on Soldiers' Physical Performance (ICSPP), Melbourne, Australia.

Walker, E. F., Doherty, J. L., Vine, C., Coakley, S., Rue, C., Lee, B. J., Flood, T. R., Blacker, S. D., Rayson, M. P., Knapik, J. J., Gebhardt, D. L., Nindl, B., Brown, P., Jackson, S., Greeves, J. P., & Myers, S. D. (2017, December). *Physical demands of a Boarding Operations Training Exercise conducted by the Royal Marines*. Presented at the 4th International Congress on Soldiers' Physical Performance (ICSPP), Melbourne, Australia.

Walker, E., Blacker, S., Rayson, M., Coakley, S., Knapik, J., Gebhardt, D., Hale, B., Brown, P., Jackson, S. Greeves, J., & Myers, S. (2017, May). *Identification and verification of critical physically demanding tasks undertaken by Royal Marines.* Presented at the annual conference of the American College of Sports Medicine, Denver, CO.

Whetzel, D. L. (2017, April). *Automated essay scoring: Human vs. machine.* Panel discussion (Chair) at the 32nd annual conference of the Society for Industrial and Organizational Psychology, Orlando, FL.

Whetzel, D. L., & McDaniel, M. A. (2017, April). *Work-family conflict: More data and more predictors.* Paper presented at the 32nd annual conference of the Society for Industrial and Organizational Psychology, Orlando, FL.

2017 Journal Articles and Book Chapters

Ault, M. K., Ness, A. M., Taylor, W. D., Johnson, G., Connelly, S., Jensen, M. L., & Dunbar, N. E. (2017). Ideological lens matters: Credibility heuristics, pre-existing attitudes, and reactions to messages on ideological websites. *Computers in Human Behavior, 68*(4), 315-325.

Beus, J. M., & Taylor, W. D. (2017). Working safely at some times and unsafely at others: A typology and within-person process model of safety-related work behaviors. *Journal of Occupational Health Psychology*, 23, 402-416.

Cortina, J. M., Green, J. P., Keeler, K. R., & Vandenberg, R. J. (2017). Degrees of freedom in SEM: Are we testing the models that we claim to test? *Organizational Research Methods, 20,* 350-378.

Dorsey, D. W., Cortina, J. M., Allen, M. T., Waters, S. D., Green, J. P., & Luchman, J. (2017). Adaptive and citizenship-related behaviors at work. In J. L. Farr & N. T. Tippins (Eds.), *Handbook of employee selection* (2nd ed., pp. 448-475). New York: Routledge.

Elson, S. B., Hartman, R., Beatty, A., Trippe, M., Buckley, K., Bornmann, J., Bochniewicz, E., Lehner, M., Korenovska, L., Lee, J. C., Servi, L., Dingwall, A., Lehner, P. E., Soltis, M., Brown, M., Beltz, B., & Sprenger, A. (2018). Critical analytic thinking skills: Do they predict job-related task performance above and beyond general intelligence? *Personnel Assessment and Decisions, 4,* 9-29.

Flood, T. R., Myers, S. D., Walker, E, F., Coakley, S. L., Rue, C. A., Lee, B. J., Vine, C. A. J., Doherty, J., Rayson, M. P., Knapik, J. J., Gebhardt, D. L., Nindl, B., Brown, P. E. H., Jackson, S., Greeves, J. P., & Blacker, S. D. (2017). A job task analysis of casualty drags performed within ground close combat roles in the UK Armed Forces. *Journal of Science and Medicine in Sport, 20*, Supp 2, S155.

Foulis, S. A., Sharp, M. A., Redman, J. E., Frykman, P. N., Warr, B. J., Gebhardt, D. L., Baker, T. A., Canino, M. S., & Zambraski, E. J. (2017). U.S. Army physical demand study: Development of the occupational physical assessment test for combat arms soldiers. *Journal of Science and Medicine in Sport, 20,* Supp 4, S74-S78.

Gebhardt, D. L. (2017). Occupational and operational physical tests and standards for the military – International status and lessons learned. *Journal of Science and Medicine in Sport, 20*, Supp 2, S7.

Gebhardt, D. L., & Baker, T. A. (2017). Physical performance assessment. In S. G. Rogelberg (Ed.), *Encyclopedia of industrial and organizational psychology* (2nd ed.), (pp. 1215-1216). Thousand Oaks, CA: Sage Publications.

Gebhardt, D. L., & Baker, T. A. (2017). Physical performance tests. In J. Farr & N. Tippins (Eds.), *Handbook of employee selection* (pp. 277-297). New York, NY: Routledge.

Hauenstein, N. M. A., Bradley, K. M., O'Shea, P. G., Magill, D., & Shah, Y. (2017). Interactions between motivation to fake and personality item characteristics: Clarifying the process. *Organizational Behavior and Human Decision Processes, 138*, 74-92.

Hymes, K., & Patelis, T. (2017). *High school assessment for students with disabilities in the era of the Every Student Succeeds Act.* Washington, DC: National Center for Learning Disabilities.

Lee, A. & Carpenter, N.C. (2017). Seeing eye to eye: A meta-analysis of self-other agreement of leadership. *The Leadership Quarterly, 29*(2), 253-275.

Lee, B. J., Myers, S. D., Walker, E, F., Coakley, S. L., Rue, C. A., Flood, T. R., Doherty, J., Vine, C., Rayson, M. P., Knapik, J. J., Gebhardt, D. L., Nindl, B., Brown, P., Jackson, S., Greeves, J. P., & Blacker, S. D. (2017). A job task analysis of digging duties conducted by the ground close combat roles in the UK Armed Forces. *Journal of Science and Medicine in Sport, 20,* Supp 2, S66.

Litwiller, B., Snyder, L. A., Taylor, W. D., & Steele, L. M. (2017). The relationship between sleep and work: A meta-analysis. *Journal of Applied Psychology, 102*(4), 682-699.

Ness, A. M., Johnson, G., Ault, M. K., Taylor, W. D., Griffith, J. A., Connelly, S., Dunbar, N. E., & Jensen, M. L. (2017). Reactions to ideological websites: The impact of emotional appeals, credibility, and pre-existing attitudes. *Computers in Human Behavior, 72, 496-511.*

O'Shea, P. G., & Puente, K. E. (2017). How is technology changing talent management? In D. G. Collings, K. Mellahi, & W. F. Cascio (Eds.), *The Oxford handbook of talent management.* (pp. 537-556). Oxford, United Kingdom: Oxford University Press.

Oswald, F. L., & Putka, D. J. (2017). Big data methods in the social sciences. *Current Opinion in Behavioral Sciences, 18*, 103-106.

Patelis, T. (2017). Review of the test of orthographic competence. In J. Carlson, K. F. Geisinger, & J. L. Jonson (Eds.), *The twentieth mental measurement yearbook* (pp. 774-776). Lincoln, NE: Buros Institute of Mental Measurements.

Putka, D. J. (2017). Reliability. In J. L. Farr & N. T. Tippins (Eds.), *Handbook of employee selection,* (2nd ed), (pp. 3-33). New York: Routledge.

Sellman, W. S., Russell, T. L., & Strickland, W. J. (2017). Selection and classification in the U.S. military. In J. L. Farr & N. T. Tippins (Eds.), *Handbook of employee selection,* (2nd ed), (pp. 697-721). New York: Routledge.

Sharp, M. A., Cohen, B. S., Boy, M. W., Foulis, S. A., Redmond, J. E., Larcom, K. Hydren, J. R., Gebhardt, D. L., Canino, M. C., Warr, B. J., & Zambraski, E. J. (2017). U.S. Army physical demands study: Identification and validation of the physically demanding tasks of combat arms occupations. *Journal of Science and Medicine in Sport, 20,* Supp 4, S62-S567.

Taylor, W. D., & Snyder, L. A. (2017). The influence of risk perception on safety: A laboratory study. *Safety Science, 95*, 116-124.

Tryon, W. W., Patelis, T., Chajewski, M., & Lewis, C. (2017). Theory construction and data analysis. *Theory & Psychology, 27*(1), 126-134.

Vancouver, J. B., & Purl, J. D. (2017). A computational model of self-efficacy's various effects on performance: Moving the debate forward. *Journal of Applied Psychology, 102*(4), 599-616.

Vine, C., Myers, S., Walker, E., Coakley, S., Rue, C., Lee, B., Flood, R., Dohery, J., Rayson, M., Knapik. J., Gebhardt, D., Nindl, B., Brown, E., Jackson, S., Greeves, J., & Blacker, B. (2017). A job task analysis to quantify the physical demands of load carriage duties conducted by ground close combat roles in the UK Armed Forces. *Journal of Science and Medicine in Sport, 20*, Supp 2, S64-65.

Wise, L. L. (2017). Commentary I: Validation of score meaning in the next generation of assessments. In K. Ercikan & J. W. Pellegrino (Eds.), *Validation of score meaning for the next generation of assessments* (pp. 52-60). New York, NY: Routledge.

2017 Technical Reports

Baker, T. A. (2017). *Development of a physical fitness test for Exelon Corporation nuclear security* (2017 No. 082). Alexandria, VA: Human Resources Research Organization.

Baker, T. A., & Gebhardt, D. L. (2017). *Examination of the handgrip test as a potential test for the San Francisco Police Officer Physical Ability Test* (2017 No. 031). Alexandria, VA: Human Resources Research Organization.

Baker, T. A., & Sullivan, T. S. (2017). *Written test review and recommendations* (2017 No. 086). Alexandria, VA: Human Resources Research Organization.

Baker, T. A., Gebhardt, D. L., & Walion, N. J. (2017). *Validation of the work performance evaluation for the Chesterfield County Department of Fire and Emergency Medical Services* (2017 No. 087). Alexandria, VA: Human Resources Research Organization.

Baldwin, S. P., Bynum, B. H., & Banjanovic, E. S. (2017). *Calibrating the SHRM-CP® and SHRM-SCP® certification tests: Windows 2-4 technical report* (2017 No. 062). Alexandria, VA: Human Resources Research Organization.

Baldwin, S. P., Wise, L. L., Taylor, W. D., & Hughes, M. G. (2017). *2018 anchor assembly* (2017 No. 084). Alexandria, VA: Human Resources Research Organization.

Baldwin, S., P. Hughes, M. G., & Wise, L. L. (2017). *Form assembly technical manual*. (2017 No. 094). Alexandria, VA: Human Resources Research Organization.

Banjanovic, E. S., & Bynum, B. H. (2017). *Psychometric research for the 2018 test delivery vendor transition* (2017 No. 083). Alexandria, VA: Human Resources Research Organization.

Beatty, A. S., & Koch, A. J. (2017). *MOSAIC data collection & analysis* (2017 No. 032). Alexandria, VA: Human Resources Research Organization.

Becker, D. E., Buckland, W. W., Chen, J., Diaz, T. E., Gribben, M. A., Michaels, H. R., Dvorak, R. L., Papadimitriou, V., Schulz, S. R., & Wharton, W. D. (2017). *Consolidated review of NAEP quality control procedures and documentation: Fiscal year 2017* (2017 No. 026). Alexandria, VA: Human Resources Research Organization.

Becker, D. E., Thacker, A. A., Sinclair, A. L., Dickinson, E. R., Woods, A., & Wiley, C. R. H. (2017). *Formative evaluation of New Hampshire's Performance Assessment of Competency Education (PACE)* (2017 No. 013). Alexandria, VA: Human Resources Research Organization.

Bynum, B. H., & Nemeth, Y. M. (2017). *2017 Field test analysis report.* (2017 No. 090). Alexandria, VA: Human Resources Research Organization.

Bynum, B. H., Banjanovic, E. S., & Baldwin, S. P. (2017). *Recalibration of the SHRM-CP and SHRM-SCP certification tests* (2017 No. 096). Alexandria, VA: Human Resources Research Organization.

Bynum, B. H., Banjanovic, E. S., & Thacker, A. A. (2017). *Third-party checking of 2016 scaling and equating for the Kentucky Performance Rating for Educational Progress (K-PREP) Tests.* (2017 No. 036). Alexandria, VA: Human Resources Research Organization.

Bynum, B. H., Swain, M. S., Nemeth, Y. M., Kennedy, C. L., Kroopnick, M., & Jin, Y. (2017). *2017 scaling and equating report*. (2017 No. 091). Alexandria, VA: Human Resources Research Organization.

Caramagno, J. P. (2017). *Job analysis of global community association managers (2016)* (2017 No. 038). Alexandria, VA: Human Resources Research Organization.

Caramagno, J. P. (2017). *Practice analysis of the payments risk management profession (2017)* (2017 No. 037). Alexandria, VA: Human Resources Research Organization.

Caramagno, J. P., Kiger, T. B., & Bradley, K. M. (2017). *2016 Analysis of the practice of social work* (2017 No. 010). Alexandria, VA: Human Resources Research Organization.

Chen, J., Buckland, W. W., Dvorak, R. L., & Schultz, S. R. (2017). *NAEP quality assurance option year 1: End-of-year site visit report* (2017 No. 070). Alexandria, VA: Human Resources Research Organization.

Day, T. C. (2017). *Sensitivity and bias evaluation of American Board of Criminalistics test items* (2017 No. 064). Alexandria, VA: Human Resources Research Organization.

Dickinson, E. R., Chen, J., & Swain, M. S. (2017). *South Carolina assessment evaluation report #1* (2017 No. 019). Alexandria, VA: Human Resources Research Organization.

Dickinson, E. R., Deatz, R. C., & Crawford, B. (2017). *Study of the alignment between the Oklahoma academic standards and the dynamic learning maps essential elements* (2017 No. 020). Alexandria, VA: Human Resources Research Organization.

Dvorak, R. L., Buckland, W. W., Millard, J., & Chen, J. (2017). *An evaluation of the Center on Standards and Assessment Implementation (CSAI): Grant year 5* (2017 No. 068). Alexandria, VA: Human Resources Research Organization.

Dvorak, R. L., Chen, J., Schulz, S. R., Gribben, M. A., Cramer, B., & Guile, S. (2017). *Research related to the 2017 NAEP transition from Paper-Based Assessment (PBA) to Digital-Based Assessment (DBA)* (2017 No. 077). Alexandria, VA: Human Resources Research Organization.

Ford, L. A., & Trippe, D. M. (2017). *Review of Pearson's scoring requirements for New York City gifted and talented assessment program 2017* (2017 No. 008). Alexandria, VA: Human Resources Research Organization.

Gebhardt, D. L. (2017). *Medical guidelines for fire department – Fairfax County* (2017 No. 049). Alexandria, VA: Human Resources Research Organization.

Gebhardt, D. L. (2017). *Medical guidelines for fire department – City of Alexandria* (2017 No. 048). Alexandria, VA: Human Resources Research Organization.

Gebhardt, D. L. (2017). *Medical guidelines for non-public safety jobs – City of Alexandria* (2017 No. 47). Alexandria, VA: Human Resources Research Organization.

Gebhardt, D. L. (2017). *Medical guidelines for police department – Fairfax County* (2017 No. 051). Alexandria, VA: Human Resources Research Organization.

Gebhardt, D. L. (2017). *Medical guidelines for police department – City of Alexandria* (2017 No. 050). Alexandria, VA: Human Resources Research Organization.

Gebhardt, D. L. (2017). *Medical guidelines for sheriff's department – Fairfax County* (2017 No. 053). Alexandria, VA: Human Resources Research Organization.

Gebhardt, D. L. (2017). *Medical guidelines for sheriff's department – City of Alexandria* (2017 No. 052). Alexandria, VA: Human Resources Research Organization.

Gebhardt, D. L., & Baker, T. A. (2017). *Description of movement category demands for Huntington-Ingalls shipyard jobs* (2017 No. 024). Alexandria, VA: Human Resources Research Organization.

Gebhardt, D. L., & Baker, T. A. (2017). Development and validation of physical tests and medical guidelines for correction *officers: Job analysis report* (2017 No. 030). Alexandria, VA: Human Resources Research Organization.

Gebhardt, D. L., & Baker, T. A. (2017). *Development of medical guidelines for public and non-public safety jobs – City of Alexandria and Fairfax County* (2017 No. 054). Alexandria, VA: Human Resources Research Organization.

Gebhardt, D. L., & Cogswell, S. (2017) *Assessment of AT&T Electronic Technician job* (2017 No. 065). Alexandria, VA: Human Resources Research Organization.

Gebhardt, D. L., Baker, T. A., & Doyle, A. L. (2017). *Lifting and pushing requirements for FedEx Handler Jobs* (2017 No. 069). Alexandria, VA: Human Resources Research Organization.

Gebhardt, D. L., Baker, T. A., & Walion, N. J. (2017). Development and validation of physical performance tests and medical guidelines for Connecticut department of correction *officers: Test development and validation report* (2017 No. 021). Alexandria, VA: Human Resources Research Organization.

Gebhardt, D. L., Baker, T. A., Walion, N. J., & Cogswell, S. (2017). *Determination of lifting weight requirements for Marriott International jobs* (2017 No. 029). Alexandria, VA: Human Resources Research Organization.

Gebhardt, D. L., Baker, T. A., Walion, N. J., & Moody, K. J. (2017). *Development and validation of a physical selection assessment for Port Authority of New York and New Jersey* (2017 No. 088). Alexandria, VA: Human Resources Research Organization.

Gebhardt, D. L., Baker, T. A., Walion, N. J., & Moody, K. J. (2017). *Development and validation of physical selection assessment for Lubbock police department* (2017 No. 043). Alexandria, VA: Human Resources Research Organization.

George, K. E. (2017). *AMCA Billing and Coding Specialist Certification: Job analysis and exam update* (2017 No. 027). Alexandria, VA: Human Resources Research Organization.

George, K. E. (2017). *AMCA EKG technician certification: Job analysis and exam update* (2017 No. 061). Alexandria, VA: Human Resources Research Organization.

George, K. E. (2017). *AMCA Medical Administrative Assistant Certification: Job analysis and exam update* (2017 No. 028). Alexandria, VA: Human Resources Research Organization.

George, K. E., & Waugh, G. W. (2017). *2016 RCC examination summary: Prepared for the Radiology Coding Certification Board* (2017 No. 006). Alexandria, VA: Human Resources Research Organization.

George, K. E., Tsacoumis, S., Putka, D. J., Bradley, K. M., & Papadimitriou, V. (2017). *Summary of the 2017 Electronic Promotion Assessment System (EPAS) administration* (2017 No. 063). Alexandria, VA: Human Resources Research Organization.

Harris, A. M., & McCloy, R. A. (2017). *Potential alternatives to the English language proficiency test* (2017 No. 059). Alexandria, VA: Human Resources Research Organization.

Harris, A. M., Sullivan, T. S., & Anderson, L. E. (2017). *SHRM strategic benefits survey results* (2017 No. 034). Alexandria, VA: Human Resources Research Organization.

Hughes, M. G. (2017). *Item bank status report: 2019 form assembly.* (2017 No. 093). Alexandria, VA: Human Resources Research Organization.

Hughes, M. G., Reeder, M. C., Purl, J., Wolters, H. M., & Kirkendall, C. D. (2017). *Tier One Performance Screen (TOPS) Initial Operational Test and Evaluation (IOT&E) special study: An examination of attrition over time* (2017 No. 004). Alexandria, VA: Human Resources Research Organization.

Human Resources Research Organization (2017). *Special Agent Merit Promotion Process (SA MPP): Technical review of the 2015-2016 cycle* (2017 No. 011). Alexandria, VA: Human Resources Research Organization.

Ingerick, M., Reeder, M. C., & Taylor, W. D. (2017). *ASVAB validation-standards evaluation for Navy electronics training* (2017 No. 095). Alexandria, VA: Human Resources Research Organization.

Kennedy, C. L., & Bynum, B. H. (2017). *Canada-only administration: Proof of concept study and operational results* (2017 No. 078). Alexandria, VA: Human Resources Research Organization.

Kiger, T. B., & D'Mello, S. (2017). *American College of Healthcare Executives: Job analysis study* (2017 No. 080). Alexandria, VA: Human Resources Research Organization.

Knapp, D. J., & Kirkendall, C. D. (Eds.). (2017). *Tier One Performance Screen initial operational test and evaluation: 2015-2016 Biennial Report* (2017 No. 079). Alexandria, VA: Human Resources Research Organization.

Knapp, D. J., & Wolters, H. M. K. (Eds.). (2017). *Tier one performance screen initial operational test and evaluation: 2014 annual report* (2017 No. 075). Alexandria, VA: Human Resources Research Organization.

Koch, A. J., Trippe, D. M., Beatty, A. S., & Purl, J. (2017). *U.S. Air Force enlisted Selection and Classification (S&C) research: CAT cyber test development* (2017 No. 022). Alexandria, VA: Human Resources Research Organization.

Lee, A., & McCloy, R. A. (2017). *A brief overview of theoretical models of reading comprehension and listening comprehension* (2017 No. 060). Alexandria, VA: Human Resources Research Organization.

McCloy, R. A. (Ed). (2017). *Recommendations report of the ASVAB Career Exploration Program expert panel* (2017 No. 057). Alexandria, VA: Human Resources Research Organization.

Medsker, G. J., & Cogswell, S. (2017). *Value of CEN® certification research study* (2017 No. 025). Alexandria, VA: Human Resources Research Organization.

Nemeth, Y. M. (2017). *HumRRO verification process and results for 2016 and 2017 FSAA-PT* (2017 No. 039). Alexandria, VA: Human Resources Research Organization.

Nemeth, Y. M., & Purl, J. (2017). *Dynamic learning maps science alternate assessment: Alignment study* (2017 No. 009). Alexandria, VA: Human Resources Research Organization.

Nemeth, Y. M., & Purl, J. (2017). *Florida standards alternate assessment: Performance task alignment study* (2017 No. 005). Alexandria, VA: Human Resources Research Organization.

Nemeth, Y. M., Purl, J., Longabach, T., Patton, E., & Wiley, C. R. H. (2017). *Florida Standards Alternate Assessment – performance task alignment study* (2017 No. 041). Alexandria, VA: Human Resources Research Organization.

Nemeth, Y. M., Wiley, C. R. H., Swain, M. S., Patton, E., Woods, A., Koch, A. J., & Huber, C. (2017). *Independent alignment review of the Maine Education assessments in mathematics and English language arts (ELA)/literacy: eMPowerME* (2017 No. 073). Alexandria, VA: Human Resources Research Organization.

O'Shea, P. G. (2017). *FAA succession planning assessment: Pilot test report* (2017 No. 007). Alexandria, VA: Human Resources Research Organization.

Paullin, C. (Ed.) (2017). *Development and validation of assessments for the Special Agent Merit Promotion Process (SA MPP) at the U.S. Secret Service* (2017 No. 042). Alexandria, VA: Human Resources Research Organization.

Paullin, C., Hough, L. M., & Caramagno, J. P. (2017). *Administrative law judge work analysis study: Revised final report* (2017 No. 016). Alexandria, VA: Human Resources Research Organization.

Putka, D. J., & Sullivan, T. S. (2017). *Development and validation of the 2017 SSA SES CDP virtual assessment tool - final report* (2017 No. 072). Alexandria, VA: Human Resources Research Organization.

Ramsberger, P. F., & Handy, K. (2017). *Market research for the ASVAB Career Exploration Program: Obtaining teacher perspectives* (2017 No. 046). Alexandria, VA: Human Resources Research Organization.

Reeder, M. C., & McCloy, R. A. (2017). *Analysis of listening scores from the two-score oral proficiency interview and the Defense Language Proficiency Test 5* (2017 No. 058). Alexandria, VA: Human Resources Research Organization.

Reeder, M. C., & Tsacoumis, S. (2017). *O*NET® analyst ratings of occupational skills: Analysis cycle 18 results* (2017 No. 056). Alexandria, VA: Human Resources Research Organization.

Reeder, M. C., & Tsacoumis, S. (2017). *O*NET® analyst ratings of occupational abilities: Analysis cycle 18 results* (2017 No. 055). Alexandria, VA: Human Resources Research Organization.

Reeder, M. C., & Tsacoumis, S. (2017). *O*NET® analyst ratings of occupational skills: Analysis cycle 17 results* (2017 No. 003). Alexandria, VA: Human Resources Research Organization.

Reeder, M. C., & Tsacoumis, S. (2017). *O*NET® analyst ratings of occupational abilities: Analysis cycle 17 results* (2017 No. 002). Alexandria, VA: Human Resources Research Organization.

Schulz, S. R., Dvorak, R. L., & Chen, J. (2017). *Evaluating the quality and alignment of PARCC ELA/literacy and mathematics assessments: Grades 3, 4, 6, and 7* (2017 No. 040). Alexandria, VA: Human Resources Research Organization.

Schulz, S. R., Wiley, C. R. H., Buckland, W. W., Michaels, H. R., Diaz, T. E., & Chen, J. (2017). *NAEP quality assurance option year 2: End-of-year site visit report* (2017 No. 071). Alexandria, VA: Human Resources Research Organization.

Schulz, S. R., Wiley, C. R. H., Buckland, W. W., Michaels, H. R., & Diaz, T. E. (2017). *NAEP quality assurance base year: End-of-year site visit report* (2017 No. 045). Alexandria, VA: Human Resources Research Organization.

Sinclair, A. L., Dickinson, E. R., Chen, J., Swain, M. S., & Thacker, A. A. (2017). *An investigation of the comparability of commission-approved teacher performance assessment models, progress report #1* (2017 No. 092). Alexandria, VA: Human Resources Research Organization.

Sinclair, A. L., McCloy, R. A., Koch, A. J., & Purl, J. (2017). *Exploring the use of innovative performance tests to measure personality: Phase 2 report* (2017 No. 067). Alexandria, VA: Human Resources Research Organization.

Sinclair, A. L., Patton, E., & Michaels, H. R. (2017). *Validity argument for Add+VantageMR* (2017 No. 074). Alexandria, VA: Human Resources Research Organization.

Sullivan, T. S., & Paullin, C. (2017). *Development of the GS14 and GS15 Special Agent Merit Promotion Process (SA MPP) supervisor evaluation* (2017 No. 081). Alexandria, VA: Human Resources Research Organization.

Sullivan, T. S., & Putka, D. J. (2017). *Foreign commercial service commercial officer simulation pilot study - summary report* (2017 No. 066). Alexandria, VA: Human Resources Research Organization.

Sullivan, T. S., & Walion, N. J. (2017). *PTCB sterile compounding pharmacy technician job analysis* (2017 No. 018). Alexandria, VA: Human Resources Research Organization.

Sullivan, T. S., Waugh, G. W., Day, T. C., & Knapp, D. J. (2017). *SHRM certification item development: Project execution plan* (2017 No. 001). Alexandria, VA: Human Resources Research Organization.

Swain, M. S., Wise, L. L., & Bynum, B. H. (2017). *Anchor pool study* (2017 No. 033). Alexandria, VA: Human Resources Research Organization.

Thacker, A. A., & Longabach, T. (2017). *Memorandum #1: Considerations related to the validation of NAEP's achievement levels* (2017 No. 089). Alexandria, VA: Human Resources Research Organization.

Thacker, A. A. (2017). *Summary of the measurement claims of the Iowa statewide assessment of student progress* (2017 No. 044). Alexandria, VA: Human Resources Research Organization.

Thacker, A. A., & Becker, D. E. (2017). *Formative evaluation of New Hampshire's Performance Assessment of Competency Education (PACE) policy brief* (2017 No. 023). Alexandria, VA: Human Resources Research Organization.

Thacker, A. A., & Becker, D. E. (2017). *Formative evaluation of New Hampshire's Performance Assessment of Competency Education (PACE)* (2017 No. 017). Alexandria, VA: Human Resources Research Organization.

Thacker, A. A., Crawford, B., & Sinclair, A. L. (2017). *Observation of the spring 2017 Kentucky Academic Standards (KAS) science field test administration* (2017 No. 035). Alexandria, VA: Human Resources Research Organization.

Thacker, A. A., Nemeth, Y. M., Hardoin, M. M., Namniek, R., Longabach, T., Deatz, R. C., Wiley, C. R. H., & Banjanovic, E. S. (2017). *California alternate assessment alignment study: Mathematics and English language arts/literacy* (2017 No. 085). Alexandria, VA: Human Resources Research Organization.

Whetzel, D. L., & Ramsberger, P. F. (2017). *Services for the development and administration of the Foreign Service Officer Test (FSOT): annual report 2016* (2017 No. 012). Alexandria, VA: Human Resources Research Organization.

Whetzel, D. L., Waugh, G. W., Sullivan, T. S., & George, K. E. (2017). *Development of a situational judgment test for the foreign service officer generalist position* (2017 No. 014). Alexandria, VA: Human Resources Research Organization.

Wiley, C. R. H., Schultz, S. R., & Sinclair, A. L. (2017). *Leveraging CAEP standards and accreditation processes to improve educator preparation programs: Execution, recruitment, and data collection plans* (2017 No. 015). Alexandria, VA: Human Resources Research Organization.

2018 Presentations

Anderson, L., Sparks-Sullivan, T., Mueller, L., Ford, J. & Herleman, H. (2018, April) *What is the future of the critical incident technique?* Panel discussion for the Society of Industrial and Organizational Psychology annual conference, Chicago, IL.

Anderson, L., Dunleavy, D., Ford, J. & Sullivan, T. (2018, July). *Best ways to adapt and apply the Critical Incident Technique,* International Personnel Assessment Council Conference, Alexandria, VA.

Anderson, L., Tonowski, R., Weisen, J., & Tsacoumis, S. (2018, August). *The Uniform Guidelines: Love them, leave them, or work to change them?* International Personnel Assessment Council Conference, Alexandria, VA.

Buhpatkar, A., Anderson, L., Fultz, C., Hudella, D., & Turner, T. (2018, July). *Computer-based test security protocols at the United States Secret Service.* International Personnel Assessment Council Conference, Alexandria, VA.

Burgoyne, T., & O'Brien, E. (2018, June). *The effects of global and target specific attachment style on performance using an Army sample.* Paper presented for the Work and Family Researchers Network Conference, Washington, D.C.

Chang, T., Zhao, X., & Sullivan, T. S. (2018, February). *Conducting a job analysis with a highly heterogenous workforce.* Presented at the Association of Test Publishers (ATP) Innovations in Testing Conference, San Antonio, TX.

Deatz, R., & Holtz, J. (2018, October). *Test security and reliability: Observing test administrations.* Poster presentation for the Conference on Test Security, Park City, UT.

Doherty, J., Blacker, S., Walker, E., Coakley, S., Lee, B., Vine, C., Rue, C., Flood, T., Rayson, M., Knapik, J., Gebhardt, D., Nindl, B., Brown, P., Jackson, S., Greeves, J., & Myers, S. (2018, July). *The development of a vehicle casualty extraction representative military task for the British Army ground close combat physical employment standards.* Paper presented at The Third International Conference on Physical Employment Standards, Portsmouth, England.

Dorsey, D. (2018, July). Panelist. *The Organizational Science and Cybersecurity Workshop.* National Science Foundation supported. George Mason University.

Dorsey, D. (2018, November). Featured Panelist. *The Future of Data and Data Analysis.* 2018 Personnel Testing Council of Metropolitan Washington's (PTCMW) Fall Event.

Gammon, A., Kung, M. C., Lin, L., Munson, L. J., & Reeder, M. C. (2018, April). *Validation in the 21st century: Legal issues, globalization, and all that jazz.* Panel session presented at the 33rd annual conference of the Society for Industrial and Organizational Psychology, Chicago, IL.

Gao, F., Ito, K., & Segall, D. O. (2018, April). *Setting a time limit for a computer adaptive test.* Paper presented at the annual meeting of the National Council on Measurement in Education, New York City, NY.

Gebhardt, D. L. (2018, July). *Historical perspective on physical employment standards.* Invited paper presented at The Third International Conference on Physical Employment Standards, Portsmouth, England.

Greitzer, F. L., Purl, J., Leong, Y. M., & Becker, D. E. (2018, May). *SOFIT: Sociotechnical and organizational factors for insider threat.* Presented at the 39th IEEE Symposium on Security and Privacy Workshops, Workshop on Research for Insider Threat, San Francisco, CA.

Holloway-Lundy, A., Kiger, T. (Chair), Krokos, K., Walmsley, P., & Whetzel, D. (2018, July). *Advancing the state-of-the-art in job analysis research and practice.* Panel discussion presented at the International Personnel Assessment Council 2018 Conference, Alexandria, VA.

Incremona, L., Harless, L., & Bradley, K. M. (2018, September). *Project management and communication planning when updating credentialing examinations.* Panel discussion presented at the 2018 annual Educational Conference of the Council on Licensure, Enforcement & Regulation, Philadelphia, PA.

Keil, C., Kiger, T., Lobene, E., Robinson, J., Schauffler, L., & Taylor, W. (Chair) (2018, July). *Finding the elephant in the room: On what to do (and not to do) in obtaining feedback from your internal and external clients.* Panel discussion presented at the annual International Personnel Assessment Council Conference, Alexandria, VA.

Knapp, D. J. (2018, April). *How are we doing? An examination of gender representation in I-O psychology.* Panelist discussion chaired by D.M. Gardner & A.M. Ryan at the annual conference of the Society for Industrial-Organizational Psychology, Chicago, IL.

Knapp, D. J., Oppler, S., Bradley, K. M., & Weiner, J. (2018, November). *A critical look at the role of soft skills in credentialing.* Panel discussion presented at the ICE Exchange, the annual conference of the Institute for Credentialing Excellence, Austin, TX.

Lee, A. (Chair), Cao, M., Cho, S., Gray, C., Hulett, A., & Rangel, B. (2018, April). *School's out forever: The transition from student to professional.* Panel discussion at the 33rd annual conference of the Society for Industrial and Organizational Psychology, Chicago, IL.

Lee, A., Newman, D. A., & Chu, C. (2018, April). *Leader consideration reconsidered: The L factor in leader behavior.* Poster to be presented at the 33rd annual conference of the Society for Industrial and Organizational Psychology, Chicago, IL.

Litwiller, B., Taylor, W. D., Steele, L. M. (2018, April) *What should an organization do to improve employee sleep?* Paper presented at the annual conference of the Society for Industrial and Organizational Psychology, Chicago, IL.

McCloy, R. A. (2018, June). Differentiating among occupations for person-occupation matching: The (in)effectiveness of personality traits. In P. J. Rottinghaus (Chair), *Integrative approaches to augmenting vocational interests in career exploration.* Symposium conducted at the National Career Development Association Global Career Development Conference, Phoenix, AZ.

McCloy, R. A. (Discussant). (2018, April). In S. T. McAbee & J. C. McDonald (Chairs), *Revisiting bandwidth-fidelity: Where general factors stand*. Symposium conducted at the 33rd annual conference of the Society for Industrial and Organizational Psychology, Chicago, IL.

McCloy, R. A. (Panelist) (2018, April). In K. S. Allen & J. Allen (Chairs), *What would you do? Criterion challenges in validation*. Alternative Session Type with Presenters conducted at the 33rd annual conference of the Society for Industrial and Organizational Psychology, Chicago, IL.

McCloy, R. A. (Panelist). (2018, June). *How to develop a Holland RIASEC interest inventory: Lessons learned with the Find Your Interests (FYI) inventory*? Roundtable Discussion conducted at the 13th biennial conference of the Society for Vocational Psychology, Scottsdale, AZ.

O'Shea, P. G. (2018, March). *New avenues for rich-media simulation: Assessment for development and person-job fit*. Invited presentation to the Metropolitan New York Association of Applied Psychology (METRO).

O'Shea, P. G., & Michaels, H. (2018, June). *Assessment via rich-media simulations.* In L. Zhang (Chair), Promote innovative approaches to improve student assessments. Symposium held at the National Conference on Student Assessment, San Diego, CA.

Patelis, T. (2018, October). *Trends in Admissions.* Presentation at the annual meeting of the Northeastern Educational Research Association, Trumbull, CT.

Patelis, T. (2018, April). *Criteria for maintaining the quality of assessments*. Presentation at the annual meeting of the National Council on Measurement in Education, New York, NY.

Patelis, T. (2018, April). *Taking a non-academic career path*. Presentation at the AERA Publishing and Career Development Workshop, New York, NY.

Patelis, T., & Matos, H. (2018, October). *Getting quality data for continuous improvement.* Presentation at the annual meeting of the Northeastern Educational Research Association, Trumbull, CT.

Peacock, D., Rue, C., Coakley, Walker, E., Vine, C., S., Lee, B., Doherty, J., Flood, T., Rayson, M., Knapik, J., Gebhardt, D., Nindl, B., Brown, P., Jackson, S., Greeves, J., Myers, S., & Blacker. S. (2018, July). *Forces required to stand-up following a fall on military cross country skis*. Paper presented at the Third International Conference on Physical Employment Standards, Portsmouth, England.

Purl, J. D., Koch, A. J., & Russell, T. L. (2018, April). *Using computer-based assessments to measure personality: Re-examining Project A*. Poster presented at the annual conference of the Society for Industrial & Organizational Psychology, Chicago, IL.

Putka, D. J. (2018, September). *10,000 job analyses per hour: A language-based approach to synthesizing KSA and interest ratings.* Presentation at the PTCMW Meeting Webcast, Washington, DC.

Putka, D. J., & Landers, R. N. (2018, April). *Modern analytics for data big and small*. Pre-conference workshop conducted at the 33rd annual conference of the Society for Industrial and Organizational Psychology. Chicago, IL.

Putka, D. J., Bateman, T., Holland, S., & Green, J. P. (2018, April). *Machine learning in an I-O's world: Putting algorithms in context.* Master tutorial presented at the 33rd annual conference of the Society for Industrial and Organizational Psychology. Chicago, IL.

Putka, D. J., Schwall, A. R., & Taylor, B. J. (2018, April). *A SIOP machine learning competition: Learning by doing*. Special session conducted at the 33rd annual conference of the Society for Industrial and Organizational Psychology. Chicago, IL.

Ramsberger, P. F., Brown, D. G., Buckland, W. W., Gribben, M. A., & Schultz, S. R. (2018). *Career exploration program needs analysis* (2018 No. 094). Alexandria, VA: Human Resources Research Organization.

Rue, C., Myers, S., Walker, E., Coakley, S., Lee, B., Vine, C., Doherty, J., Flood, T., Rayson, M., Knapik, J., Gebhardt, D., Nindl, B., Brown, P., Jackson, S., Greeves, J., & Blacker. S. (2018, July). *The development of a repeated lift and carry (RL&C) representative military task (RMT) for the UK armed forces ground close combat (GCC) physical employment standards*. Paper presented at the Third International Conference on Physical Employment Standards, Portsmouth, England.

Saiar, A., Peabody, M., Looney, E. W., & Bradley, K. M. (2018, November). *Baby, come back: A survey of recertification and renewal practices in credentialing*. Panel discussion presented at the the annual conference of the Institute for Credentialing Excellence, Austin, TX.

Shewach, O. R., & Sackett, P. R. (2018, April). *Investigating the nomological network of workplace aggression*. Paper presented at the 33rd annual conference of the Society for Industrial and Organizational Psychology, Chicago, IL.

Shewach, O. R., Sackett, P. R., & Quint, S. (2018, April). *The effect of stereotype threat in operational test settings: A meta-analysis*. Paper presented at the 33rd annual conference of the Society for Industrial and Organizational Psychology, Chicago, IL.

Shu, S., Kuncel, N. R., & Yu, M. C. (2018, April). *Expert vs. novice judgments in assessments: The impact of experience on accuracy.* Poster presented at the 33rd annual conference of the Society for Industrial and Organizational Society, Chicago, IL.

Shu, S., Kuncel, N. R., & Yu, M. C. (2018, April). *Improving judgments in assessments: The impacts of training and information load.* Poster presented at the 33rd annual conference of the Society for Industrial and Organizational Society, Chicago, IL.

Sinclair, A. L. (2018, June). *Implications of ESSA on Career Readiness: Expanded Opportunities for Improving Student Achievement Outcomes.* Presentation at the Council of Chief State School Officers (CCSSO) National Conference on Student Assessment, San Diego, CA.

Sullivan, T. S., & Hughes, M. G. (2018, April). Situational judgment tests: Debating response formats. In M. G. Hughes & A. Harris (Chairs), *Of situations and responses: Unpacking the elements of situational judgment tests*. Symposium presented at the 33rd annual conference of the Society for Industrial and Organizational Psychology, Chicago, IL.

Sullivan, T. S., Puente, K. E., Allen, A., Bedwell, S., & Chang, T. (2018, July). *A motivated panel on motivating Subject Matter Experts (SMEs)*. Panel discussion for the International Personnel Assessment Council (IPAC) annual conference, Alexandria, VA.

Sullivan, T. S., Taylor, W. D., & Lee, A. L. (2018, July). *So you want to learn how to develop a situational judgment test (SJT)?* Tutorial conducted at the International Personnel Assessment Council Conference, Alexandria, VA.

Sullivan, T. S., Zhao, X., & Chang, T. (2018, February). *Strategic planning: A practitioner's guide to using job analysis to support a variety of activities*. Presented at the Association of Test Publishers (ATP) Innovations in Testing Conference, San Antonio, TX.

Swain, M. S., Wise, L. L., & Kroopnick, M. (2018, April). *Exploring the use of a multi-state test*. Paper presented as part of a symposium at the annual conference of the National Council on Measurement in Education, New York, NY.

Swain, M., Hughes, M., Baldwin, S. P., Bynum, B., Kroopnick, M. Ajder, E., & Jin, Y. (2018, April). Monitoring the assessment's lifecycle: Item development through test administration. In T. Patelis (Chair), *Maintaining quality assessments in the face of change*. Symposium presented at the annual conference for National Council of Measurement in Education, New York City, NY.

Taylor, B. J., & Putka, D. J. (2018, April). *Deep-learning introduction and applications within I-O psychology and HR analytics*. Master tutorial conducted at the 33rd annual conference of the Society for Industrial and Organizational Psychology. Chicago, IL.

Tsacoumis, S. (2018, April). *Innovations in employee selection: Trends, challenges, and technological advancements in employee selection.* Speed mentoring at the 33rd annual conference of the Society for Industrial and Organizational Psychology, Chicago, IL.

Tsacoumis, S. (Panelist). (2018, April). *Are assessment centers worth the effort: When and when not.* Panel discussion at the 33rd annual conference of the Society for Industrial and Organizational Psychology, Chicago, IL.

Vine, C., Rue, C., Walker, E., Coakley, S., Lee, B., Doherty, J., Flood, T., Rayson, M., Knapik, J., Gebhardt, D., Nindl, B., Brown, P., Jackson, S., Greeves, J., Myers, S., & Blacker. S. (2018, July). *Development of a fire and movement representative military task for the UK armed forced ground close combat physical employment standards*. Paper presented at the Third International Conference on Physical Employment Standards, Portsmouth, England.

Walion, N. J., & Baker, T. A. (2018, April). *Same job, different job: Task differences between men and women in police work.* Poster presented at the 33rd annual conference of the Society for Industrial-Organizational Psychology, Chicago, IL.

Whetzel, D. L. (Chair), & Campbell, J. (Panelist) (2018, April). *The utility and trustworthiness of I-O literature: Believe it or not!* Panel discussion at the 33rd annual conference of the Society for Industrial and Organizational Psychology, Chicago, IL.

Yin, P. (2018, April). *Obtain growth expectations based on conditional distribution and regression*. Paper presented at the annual meeting of National Council on Measurement, New York, NY.

Yin, P., & Tranguch, M. (2018, April). *Validating a vertical scale based on learning progressions*. Paper presented at the annual meeting of National Council on Measurement, New York, NY.

Yu, M. C., & Kuncel, N. R. (2018, May). *Pushing the limits for judgmental consistency: Comparing random weighting schemes with expert judgments*. Poster presented at the annual convention of the Association for Psychological Science, San Francisco, CA.

Yu, M. C., & Kuncel, N. R. (2018, April). *Interrater reliability is robust in individual assessments.* Poster presented at the 33rd annual conference of the Society for Industrial and Organizational Society, Chicago, IL.

Yu, M. C., & Kuncel, N. R. (2018, April). *Policy capturing weights are resistant to fungible deviations.* Poster presented at the 33rd annual conference of the Society for Industrial and Organizational Society, Chicago, IL.

Yu, M. C., & Kuncel, N. R. (2018, May). *Pushing the limits for judgmental consistency: Comparing random weighting schemes with expert judgments.* Poster to be presented at the annual convention of the Association for Psychological Science, San Francisco, CA.

2018 Journal Articles and Book Chapters

Anderson, L. (2018). Using assessments to assist in developing work teams. *Assessment Council News,* International Assessment Council, Washington, DC.

Buede, D. M., Axelrad, E. T., Brown, D. P., Hudson, D. W., Laskey, K. B., Sticha P. J., & Thomas, J. L. (2018). Inference enterprise models: An approach to organizational performance improvement. *WIREs Data Mining and Knowledge Discovery 2018*;e1277.

Alaybek, B., Green, J. P., & Dalal, R. S. (2018) Assessment of situational influences. In V. Zeigler-Hill & T.K. Shackelford (Eds.), *Encyclopedia of personality and individual differences* (pp. 1-8).

Dai, T., Van Boekel, M., Cromley, J. G., Nelson, F. E., Fechter, T. (2018). Using think-alouds to create a better measure of biology reasoning. *SAGE research methods cases.*

De Ayala R. J., Smith B., & Norman Dvorak, R. L. (2018). A comparative evaluation of kernel equating and test characteristic curve equating. *Applied Psychological Measurement*, 42, 155-168.

Dreibelbis, R., Martin, J., Coovert, M., & Dorsey, D. (2018). The looming cybersecurity crisis and what it means for the practice of Industrial and Organizational Psychology. *Industrial and Organizational Psychology, 11(2),* 346-365.

Elson, S. B., Hartman, R., Beatty, A., Trippe, M., Buckley, K, Bornmann, J., Bochniewicz, E., Lehner, M., Korenovska, L., Lee, J., Servi, L., Dingwall, A., Lehner, P. E., Soltis, M., Brown, M., Beltz, B., & Sprenger, A. (2018). Critical analytic thinking skills: Do they predict job-related task performance above and beyond general intelligence? *Personnel Assessment and Decisions, 4*, 9-29.

Green, J. P., Dalal, R. S., Swigart, K. L., Bleiberg, M. A., Wallace, D. M., & Hargrove, A. K. (2018). Personality consistency and situational influences on behavior. *Journal of Management*. Advanced online publication.

Huber, C., Capman, J., Boyce, A., & Lobene, E. (2018). Cross-cultural generalization of a multidimensional pairwise preference personality inventory: Methodological considerations and empirical findings. *Assessment Council News*.

Lee, A., & Carpenter, N.C. (2018). Seeing eye to eye: A meta-analysis of self-other agreement of leadership. *The Leadership Quarterly, 29*(2), 253-275.

Patelis. T. (2018, March). Integrating college and career readiness. *NCME Newsletter, 26*(1), 68.

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